



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/714,292	11/17/2000	Takatoshi Yamanaka	1080.1084 (JDH)	4924
21171	7590	05/16/2007		
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER PATEL, SHEFALI D	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 05/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/714,292	YAMANAKA ET AL.	
	Examiner	Art Unit	
	Shefali D. Patel	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 8-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 28, 2006 has been entered.

Response to Amendment

2. The amendment was filed on December 28, 2006.
3. Claims 3 and 17-19 are cancelled.

Response to Arguments

4. Applicant's arguments, see Remarks (with regard to the new limitations added to the claims) on page 8, filed on December 28, 2006, with respect to the rejection(s) of claim(s) 1, 2 and 5-16 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sako (US 6,671,394).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 5-7 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ogawa (US 6,577,753) and Sako (US 6,671,394).

With regard to **claim 1** Ogawa discloses image processing apparatus for subjecting a radiation image to an image processing to image a target by using an imaging device, comprising: a data obtaining

Art Unit: 2624

section to obtain the radiation image, and to identify the imaging device used to obtain the radiation image and the target from where the radiation image was obtained (col. 4 lines 13059, discloses obtaining a radiation image such as a CR apparatus. It further describes a selection means 22 for identifying the type of photography device); an image processing condition storing section to store image tables each providing one of a plurality of processing conditions associated with one of various imaging devices and targets (col. 4 lines 43-65, describes LUT's (image tables) that provide an image processing condition associated with the type of the apparatus); and an image processing section to read from said image processing condition storing section the image processing condition that corresponds to the imaging device used to obtain the radiation image and the target from where the radiation image was obtained and to subject the radiation image obtained by said data obtaining section to image processing in accordance with the image processing condition read by the image processing section (col. 4 lines 43-64, describes reading a processing condition from the LUT's and subjecting the radiation image to image processing (the references describes applying tone correction)).

Ogawa does not expressly disclose the details of image processing section with the specific type of processing such as gradation conversion function and frequency emphasis function. Sako discloses image processing section subjects the medical image obtained by said data obtaining section to at least a gradation conversion processing (col. 13 line 29) and an frequency emphasis processing (col. 12 line 51); said image processing condition storing section stores a gradation conversion function used for the gradation conversion processing in accordance with the type of the imaging device and target (col. 13 lines 30-46, col. 14 lines 13-25); and a frequency emphasis function used for the frequency emphasis processing and indicating a degree of frequency emphasis in which an average density around respective points of the medical image is used as a variable in accordance with the type of the imaging device and target (col. 11 lines 15-27 for example and col. 13 lines 5-28); and gradation conversion processing and frequency emphasis processing are performed differently for different imaging devices and different

Art Unit: 2624

targets (Ogawa discloses performing processing differently depending on the type of imaging device as disclosed above. Combining this with Sako's gradation conversion processing, we get a system that performs these two process differently for different imaging devices and different targets.); and the image processing section performs gradation conversion processing based on a plurality of gradation processing parameters that are individually input by a user (col. 15 lines 15-30 where the operator changes the variable 'd' and 'c' for the gradation processing equation 6 seen on col. 14), each gradation processing parameter relating to how a different aspect of an original image is translated into a revised image (col. 15 lines 30-31 as the revised image has been determined (processed)).

Ogawa and Sako are combinable because they are from the same field of endeavor, i.e., Medical Image Processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Sako with Ogawa. The motivation for doing so is to convert the image into an easily diagnostic image as suggested by Sako at col. 13 lines 33-41. Therefore, it would have been obvious to combine Sako with Ogawa to obtain the invention as specified in claim 1.

Claim 2 recites identical features as claim 1. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 2. Please note that medical devices in Ogawa also qualify as "photography" devices for purposes of the claim.

With regard to **claim 5** Ogawa discloses an image processing condition operating section to add, to change, and to delete said image processing condition in response to an operation (col. 5 lines 7-15, changing the image processing condition in response to an operation such as the changing of the input apparatus).

With regard to **claim 6** Ogawa discloses an image display section to display the medical image subjected to the image processing by said image processing section (See Figure 2, Image Display 30).

With regard to **claim 7** Sako discloses an interested area designating section to designate an area of interest on the medical image displayed in said image display section in response to an operation

Art Unit: 2624

(Figure 2 with an overviewed display 304 which displays are of interest), wherein said image display section lowers a luminance of an area, excluding the area of interest designated by said interested area designating section, to display the medical image (buttons 305 which lowers a luminance of an area, col. 5 lines 54-59). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify the Ogawa display to include an interested are designation section taught by Sako. Such a modification would have allowed for a way to more clearly display parts of the medical image.

With regard to **claim 14** Ogawa discloses data obtaining section, which obtains a radiation image as the medical image (this is disclosed in entire reference of Ogawa, specifically at col. 4 lines 13-27).

Claims 15-16 recites identical features as claims 1 and 2. Thus, arguments similar to that presented above for claims 1 and 2 are equally applicable to claims 15-16.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa (US 6,577,753) in view of Sako (US 6,671,394) as applied to claims 1-2, 5-7 and 14-16 above, and further in view of Ogura (US 6,314,198).

With regard to **claim 4** Ogawa and Sako discloses the image processing apparatus as disclosed above and the arguments are not repeated herein, but are incorporated by reference. Neither Ogawa nor Sako expressly disclose the use of luminance correction processing. Ogura discloses this at col. 36 lines 20-30 – describing a luminance correction processing using a dynamic range compression processing function, which uses the average density as a factor. Ogawa, Sako and Ogura are combinable because they are from the same field of endeavor, i.e., image processing and same problem solving area of radiation images. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Ogura with Ogawa and Sako. The motivation for doing so is to allow the “optimum image processing for the radiographic, digital image without troubling the operator”.

Art Unit: 2624

Therefore, it would have been obvious to combine Ogura with Ogawa and Sako to obtain the invention as specified in claim 4.

Allowable Subject Matter

8. Claims 8-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The closest prior art to Ogawa and Sako are directed to image processing apparatus as disclosed in independent claims 1, 2, 15 and 16.

However, the closest prior art fails to disclose anything about *said interested area designating section designates the area of interest on the medical image displayed in said image display section and designates a coefficient indicating a degree of drop of the luminance of the area, excluding the area of interest, in response to the operation, and said image display section lowers the luminance of the area, excluding the area of interest designated by said interested area designating section, down to a luminance in accordance with the coefficient designated by said interested area designating section to display the medical image as disclosed in claim 8*. Further, the closest prior art fails to disclose *a part recognizing section to recognize positions of a plurality of parts appearing in the medical image, wherein said image processing section subjects the area of interest, designated by said interested area designating section, to the image processing in accordance with a respective one of the plurality of parts appearing in the area of interest, and being among the plurality of parts having positions thereof which are recognized by said part recognizing section as disclosed in claim 9; said image display section applies a common area of interest as that of the area of interest designated by said interested area designating section with respect to one medical image among the plurality of medical images displayed in the image display section to the plurality of medical images, and in each of the medical images lowers a luminance of a common area, excluding the common area of interest to display the plurality of medical images in claim*

Art Unit: 2624

10; a scanning processing designating section to designate, in response to an operation, a scanning processing to set an area of interest on the medical image displayed in said image display section and to move the area of interest in a predetermined direction, wherein said image display section displays, in accordance with the scanning processing by said scanning processing designating section, the medical image in which the area of interest successively moves, and a luminance of an area, excluding the area of interest, is lowered in claim 11; a part recognizing section to recognize positions of a plurality of parts appearing in the medical image, wherein said image processing section subjects the area of interest, which is successively moved, to the image processing in accordance with a respective one of the plurality of parts appearing in the area of interest, which is successively moved, and being among the plurality of parts having positions thereof which are recognized by said part recognizing section in claim 12; and said image display section arranges and displays, in accordance with the scanning processing by said scanning processing designating section, a plurality of medical images each having a common area of interest, which is common between the plurality of medical images, the common areas being set at corresponding positions and with corresponding timings and synchronously moved at corresponding speeds in claim 13. It is for these reasons in combination with all the other elements of the claim that claims 8-13 would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims.

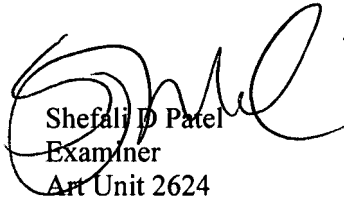
Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shefali D. Patel whose telephone number is 571-272-7396. The examiner can normally be reached on M-F 8:00am - 5:00pm (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Shefali D. Patel
Examiner
Art Unit 2624

sdp